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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/656,238  | 09/08/2003  | Nathalie Mougin      | 05725.0570-01       | 1859             |
| 22852   | 7590        | 04/03/2008           |                     |                  |
| FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER<br>LLP<br>901 NEW YORK AVENUE, NW<br>WASHINGTON, DC 20001-4413 |             |                      |                     |                  |
| EXAMINER  |             |                      |                     |                  |
| SILVERMAN, ERIC E   |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
| 1618  |             |                      |                     |                  |
| MAIL DATE   |             | DELIVERY MODE        |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/656,238

**Applicant(s)**

MOUGIN, NATHALIE

**Examiner**

Eric E. Silverman, PhD

**Art Unit**

1618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 55 and 58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 55 and 58 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicants' remarks, filed 1/17/2008, have been received. Claims 55 and 58 are pending in this action.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 55 and 58 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **This written description rejection is maintained for reasons of record and those discussed below.**

#### ***Response to Arguments***

Applicants' arguments have been fully considered, but are not persuasive. Applicants' argue that the specification links star copolymers with their ability to retain and shape hair, due to the highly specific nature of their specifically ordered structure. Response at 4. However, star copolymers are recognized in the art to be, generally, disordered systems. See the Kulkarni reference, cited on PTO 892. Indeed, the Kulkarni reference is directed at attempting to determine structural information about star copolymers and allied disordered systems. As such, it cannot be said that the generic star copolymer of the claims has a highly specific or ordered structure.

The sole exemplary star copolymer in the disclosure is an exception to this rule. In Example 2, a star copolymer is prepared using an Atom Transfer Radical Polymerization (ATRP) technique (the specification does not specify that ATRP is used, but the combination of acrylic monomers, CuBr, bipyridine, and an initiator are typical of ATRP conditions). ATRP is a special type of polymerization where, unlike typical polymerizations, there is essentially no chain transfer. When used to make star copolymers, ATRP produces a star copolymer with a specific, ordered structure that is not available when other techniques are used. See Zhang reference, cited on PTO 892.

Therefore, while the specification does disclose that a "specific ordered structure" is required for a star copolymer to retain or shape hair, not every star copolymer has such a structure. The instant claims encompass both ordered and disordered star copolymers. Indeed, instant claims embrace materials that are not star copolymers, such as a linear polymer (MkMj)-A-(MkMj). Accordingly, Applicants arguments, directed only to highly ordered star copolymers, are not commensurate in scope with the claims. Nor is Applicants' description of highly ordered star copolymers useful for shaping and retaining hair commensurate in scope with the claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 55 and 58 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims define Mk by a property of its homopolymer, namely the Tg of its homopolymer. However, the Tg of a homopolymer varies with its molecular weight. See the Montserrat reference. As an example, Montserrat shows that the Tg of poly(ethylnene terphthalate) varies from 342.0 to 331.3K as the number average molecular weight varies from 371,000 to 4,500. Because the claim does not define the molecular weight of the homopolymer at which the Tg is to be measured, it is impossible to determine what monomers are defined by Mk.

Mj is defined similarly in relation to the Tg of its homopolymer, except that the Tg of Mk's homopolymer is different from that of Mk. All of the problems associated with Mk also apply to Mj.

### ***Response to Arguments***

Applicants' argue that defining a claim by functional limitations alone does not render the claim indefinite. While Applicants' are correct that functional limitations can suffice to properly define an invention under this statute, in this case the functional limitations themselves are indefinite. The problem here is not that the limitations are functional, but that there is no way to determine what the functional limitations read on.

Applicants' also argue that methods of determining Tg are well known. Applicants' are correct that the artisan can determine a Tg. However, the problem in this case is that the claims do not tell the artisan what the material is for which Tg must be determined in order to define Mk and Mj. The Tg of a homopolymer will be different depending on both the nature of the monomer and the molecular weight. Without

knowing the molecular weight at which T<sub>g</sub> is to be determined, it is impossible to know which monomers will have any given T<sub>g</sub> or range of T<sub>g</sub>'s.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric E. Silverman, PhD whose telephone number is (571)272-5549. The examiner can normally be reached on Monday to Thursday 7:00 am to 5:00 pm and Friday 7:00 am to noon.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Hartley can be reached on 571 272 0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael G. Hartley/  
Supervisory Patent Examiner, Art Unit 1618

Eric E. Silverman, PhD  
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